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Evaluation of a police-led addiction treatment referral program: the Gloucester Police Department's Angel Program

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Thesis

EVALUATION OF A POLICE-LED ADDICTION TREATMENT REFERRAL PROGRAM: THE GLOUCESTER POLICE DEPARTMENT'S ANGEL PROGRAM

by

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DEDICATION

To the participants of the Gloucester Angel Program, who openly shared their individual stories, struggles, and recovery.

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To my parents, Mardge Cohen and Gordon Schiff, you've taught me everything I know about hard work, commitment, social justice, and research rooted in improving the lives of the people you care deeply for. To Simeon Kimmel, my life partner, best-friend, husband, co-pilot in our parenting journey, and the best copy-editor out there, thank you for being my better half. You've made every idea I didn't even know I had sharper, more developed, and described in half the number of words. To Sydney Ella, your joy and rambunctious spirit challenges me and completes me like nothing else ever can.

EVALUATION OF A POLICE-LED

ADDICTION TREATMENT REFERRAL PROGRAM:

THE GLOUCESTER POLICE DEPARTMENT'S ANGEL PROGRAM

DAVIDA MARTI SCHIFF

ABSTRACT

Background: The increasing rates of opioid use disorder and resulting overdose deaths are a public health emergency, yet only a fraction of individuals in need receive treatment. This thesis aims to describe the implementation of and participants' experiences with a novel police-led addiction treatment referral program.

Methods: Follow-up telephone calls to participants in the Gloucester Police Department's Angel Program from June 2015–May 2016. Open-ended survey questionnaires assessed individuals' program participation experience, confirmed police-reported placement, and queried self-reported substance use and treatment outcomes.

Results: Surveys were completed by 198 of 367 individuals (54% response rate) who participated 214 times. Reasons for participation included: positive program publicity, belief that treatment placement would be obtained, poor prior treatment system experience, and external pressure to seek treatment. The majority of participants reported positive experiences citing the welcoming, nonjudgmental services. In 75% of encounters, participants confirmed they entered referral placement. Participants expressed frustration when they did not meet program entry requirements and had difficulty finding sustained treatment following initial program placement. Conclusions: A police-led referral program was feasible to implement and acceptable to participants. The program

was effective in finding initial access to treatment, primarily through short-term detoxification services. However, the fragmented treatment system remains a barrier to long-term recovery.

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PROBLEM STATEMENT

The increasing rates of opioid use disorder (OUD) and opioid-related overdose deaths are a public health emergency, yet only a fraction of individuals in need receive treatment. In response to rising overdose deaths in their community, the Gloucester Police Department developed a new program called the Angel Program, aimed providing screening and referral services on a voluntary basis to individuals seeking help for opioid addiction at the police department without risk of arrest. The program received early positive publicity and within the first year of the program, over 200 similar programs aimed at deflecting individuals from the criminal justice system to addiction treatment were being developed at police departments across the United States. This manuscript presents a timely evaluation of the first year of the program to help inform the implementation and dissemination of similar programs.

LITERATURE REVIEW

Heroin use, the misuse of prescription opioid drugs, and opioid-related overdose deaths have risen to epidemic proportions in the last decade, prompting both state and federal responses to promote prevention and treatment efforts.[1–5] In 2015, 3.8 million people in the US reported using prescription opioids for non-medical purposes, 2 million had a diagnosis of opioid use disorder (OUD) involving prescription opioids, and over 590,000 had an OUD involving heroin.[6]

Despite evidence-based effective treatment modalities, only one-fifth of people with OUD received any treatment from 2009–2013; barriers to treatment include stigma,

cost, insurance, geography, and a difficult to access treatment system.[4,7–11] Following self-referral, the criminal justice system is the second largest source of referrals to the substance use treatment system nationally.[12] Specialized programs within the criminal justice system including diversion programs, drug courts, community-based treatment, and integrated case management[13–15] attempt to link individuals to substance use treatment following an arrest. New programs have focused on "deflection," defined as using the criminal justice system as an access point to obtain addiction treatment, are emerging. Since 2015, more than 200 police departments in 29 states have affiliated with the Police Assisted Addiction Recovery Initiative (PAARI), an organization that supports police deflection programs.[16,17]

CONCEPTUAL MODEL

To perform a rigorous evaluation of a real-world program, I utilized a standardized approach and framework. The Centers for Disease Control and Prevention established a recommended evaluation framework that was used to guide this program evaluation, shown below in Figure 1.[18] The six key steps include: engaging stakeholders, describing the program, focusing the evaluation design, gathering credible evidence, justifying conclusions, and sharing lessons learned. I focused the evaluation on the process of program development and implementation and formative experiences of participants. Furthermore, I used this framework's standards of utility, feasibility, acceptability, and accuracy to assess program effectiveness.

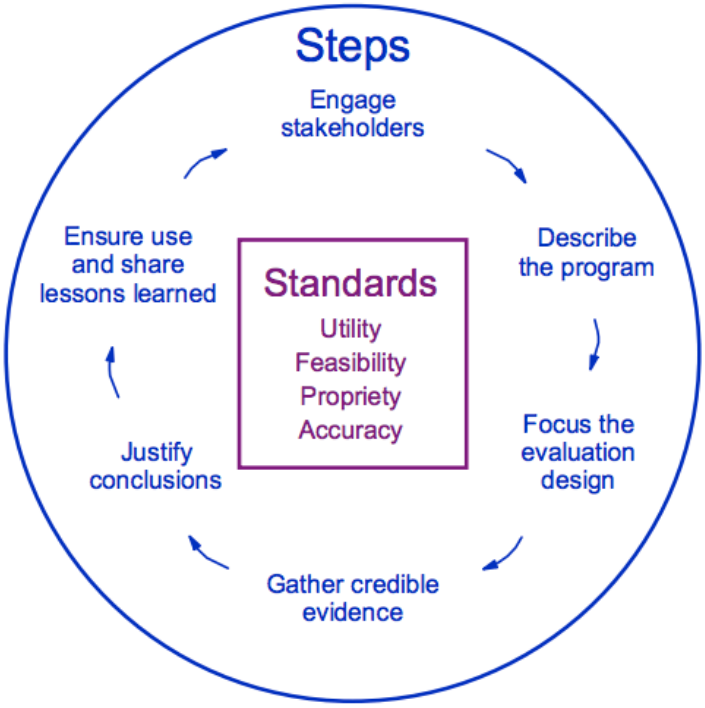

Figure 1: CDC Recommended framework for program evaluation

Additionally, I applied the chronic care model to the framework above to guide our program evaluation. The chronic care model, a model initially designed to understand chronic medical conditions such as heart disease and COPD, has more recently been adapted to understanding how to improve outcomes for individuals with addiction. The addiction chronic care model, shown below in Figure 2 emphasizes the role that both health care providers and the community have in improving health outcomes for individuals with substance use disorder. This framework also highlights the importance of continued, positive, productive interactions with the treatment system, thus was used to inform the development of our follow-up telephone survey questionnaire and explore the impact that the Gloucester Angel Program had on sustained recovery and treatment retention.

Figure 2: Addiction Chronic Care Framework

SUMMARY

The goal of this thesis is to describe the first year of one of the earliest deflection programs, the Gloucester Police Department's (GPD) Angel Program (AP), a police-led program designed to reduce barriers to enter addiction treatment. First, I describe the initial program design and its rapid adaptation and implementation. Second, I document the socio-demographic and substance use characteristics of program participants. Next, I report why participants came to the AP, their experiences in the program, and facilitators and barriers to treatment access and retention. Finally, I discuss placement results and participants' self-reported substance use treatment outcomes following program participation.

RESEARCH QUESTIONS AND SPECIFIC AIMS

1) How was the Angel Program developed, implemented, and adapted during its first year?

Aim 1.1: To elucidate the Angel Program design, implementation strategy, and reasons for adaptation

2) Who are the individuals who participated in the first year of the Gloucester Police Department's AP?

Aim 2.1: Describe the socio-demographic and substance use characteristics of Angel Program participants.

Aim 2.2: Report on police-reported direct referral to addiction services

3) What were experiences of individuals participating in the AP and what happened to them after participation?

Aim 3.1: Through follow up telephone calls to participants, explore why participants came to the AP and what were the facilitators and barriers to successful placement

Aim 3.2: Through self-report during follow-up telephone calls, determine current substance use and treatment engagement

DATA SOURCES

Three separate data sources are used for this evaluation. First, I analyzed intake forms created by the GPD and researchers at the Boston University School of Public Health. Police officers collected information for the intake forms, including baseline socio-

demographic and substance use characteristics of participants. Next, police-reported placement data documented on intake forms and in a separate secure electronic database was used to determine direct referral rates. Finally, I developed a structured survey questionnaire that was designed de novo for this project. Follow-up telephone calls to all participants were completed by trained research assistants working for the Police Assisted Addiction Recovery Initiative (PAARI)

METHODOLOGY

This paper uses an exploratory design to describe the individuals participating in the AP during its initial 12 months (June 1, 2015 to May 31, 2016). First, the program model and rapid adaption is presented based on conversations with the Gloucester Police Chief and Police staff. Next, a descriptive analysis was completed to characterize individuals presenting for referrals and document police-reported placement outcome. Finally, survey methods were used to ascertain themes regarding participant's experiences elicited through follow-up telephone calls.

Data Collection

An intake form was developed to collect demographic information including age, gender, education, housing status, marital status, insurance status, current and prior drug use, and treatment services obtained. Data were collected by the police officers, who also documented a final placement for either detoxification or substance use treatment

services to track the program's impact. The finalized intake form is attached in Appendix 1.

Next, participants were contacted via telephone starting two months after participation by trained research assistants. Eight call attempts were made per participant during both daytime and evening hours (four to the participant and four to a listed contact if the participant could not be reached directly). Callers took detailed notes while completing a 10–30 min semi-structured questionnaire, attached in Appendix 2. Questions elicited responses on the following topics: why participants went to the GPD as opposed to a hospital or clinic, experience participating in the program and suggestions for improvement, confirmation of police-reported placement, experience at referral placement, type and duration of treatment received, and current substance use and treatment retention. Follow-up responses and nonresponses were compared by baseline characteristics.

Analysis

Intake forms, placement information, and follow up call data were entered into REDCap (secure database software) by trained research assistants. De-identified data from REDCap were exported to SAS version 9.3 (Cary, NC) in order to compute descriptive (mean and frequency) and bivariate analyses (2-sided Student t-test and Pearson Chi-squared test were used, $p<0.05$ used to test for significant differences), comparing the baseline demographic and substance use characteristics of telephone survey responders with non-responders. The short answer responses were coded in Microsoft Excel with three members of the study team (DS, MLD, LC) individually

coding the same three quarters of the interviews, followed by meetings to review data and establish consensus about emerging themes. Two coders reviewed the remaining interviews (DS, ZW) to ensure no new themes emerged and consensus had been reached.

The Boston University IRB reviewed this project and deemed it exempt from full review.

PROGRAM DEVELOPMENT

Gloucester is a small city north of Boston where substance related hospital discharges are approximately 1.5 times the state average. In June, 2015, the GPD launched the AP to provide a no-arrest, voluntary screening and referral service to individuals seeking help for OUD at the police department. The program was developed by then Police Chief Leonard Campanello in response to increasing overdose deaths in Gloucester. It was advertised in community meetings and on social media.

Based on initial experiences, the program structure evolved rapidly. On arrival to the GPD, police staff confirmed individuals met the programs' inclusion criteria: no active arrest warrants or acute medical or safety concerns. Initially, eligible participants were transported to a hospital emergency department to be evaluated and placed by State-supported staff trained to screen and find treatment for OUDs. The program was modified almost immediately when hospital leadership expressed concern that participants would overwhelm the emergency department. In response, eligible participants would stay at the police department and trained staff came to them to complete assessments for those seeking treatment. After observing the screening process, a brief set of questions

followed by calls to treatment programs, the GPD officers felt it would be more efficient to screen and place participants themselves.

In the final iteration, officers screened participants and called treatment centers directly. The time involved ranged from minutes to hours. If an officer judged that the process would take several hours, individuals were assigned an "Angel," a volunteer willing to provide company and support for the participant while awaiting transfer to services. Once a referral was accepted, the police department ensured immediate transport to the treatment center from a relative or friend or a contracted ambulance service. On rare occasion, philanthropic funds paid for transport to a distant treatment program.

As program popularity grew, participants occasionally called the AP for help. Whenever possible, officers would attempt to screen and place individuals over the phone. The GPD operated the program with on duty existing personnel supported by both voluntary and paid overtime.

RESULTS

Sociodemographic and Substance Use Characteristics

During the first year of the AP, the GPD recorded 429 total encounters by 376 unique participants. Ten percent (38/382) of participants returned to the GPD to seek additional help. The mean age of the participants was 29.4 years, 70% were male, 80% were single, and 85% had health insurance (Table 1). Twelve percent reported living at a Gloucester address, 25% reported living in another town/city in the same county, and

40% in other counties across Massachusetts, 5% came from other states including New Hampshire, Maine, New Jersey and Ohio, and 16% were homeless at the time they entered the station.

The mean age participants reported first using drugs and opioids was 15.3 and 20.4 years respectively. At initial presentation, 84% reported using opioids in the previous 24 hours, most commonly intravenous heroin, followed by prescription opioids and intranasal heroin. More than 80% of participants had obtained detoxification services in the past (Table 1).

Characteristic	**Number of responses**	**Frequency (%) or Mean (sd)**
Age (yrs)	374	29.4 (9.8)[1]
Gender (% male)	373	261 (70.0%)
Location	374	
Gloucester		44 (11.8%)
Other Essex County, MA		93 (24.9%)
Other MA		153 (40.9%)
Out of state		21 (5.6%)
Currently homeless		63 (16.8%)
Insurance Status (% yes)	362	309 (85.4%)
Education (% HS graduation)	307	263 (85.7%)
Prior drug arrests (% yes)	295	161 (54.6%)
Age started using drugs (yrs)	281	15.3 (3.6)
Age started using opioids (yrs)	287	20.4 (5.6)
Last opioid use	326	
Same day		178 (54.7%)

Yesterday		94 (28.8%)
2–4 days		33 (10.1%)
>5 days		21 (6.4%)
Current Drug Use[2]	291	
Heroin – Inject		228 (78.4%)
Heroin – Snort		58 (19.9%)
Prescription Opioids		73 (25.1%)
Fentanyl		11 (3.8%)
Methadone		6 (2.1%)
Buprenorphine		15 (5.2%)
Prior detox	285	
Never		53 (18.6%)
1–5 times		144 (50.5%)
6–10		44 (14.7%)
>10		46 (16.1%)
Other types of treatment for opioids received[2]	202	
Methadone		58 (28.7%)
Buprenorphine		95 (47.0%)
Self-help group (NA, AA, etc)		165 (81.6%)
Counseling		57 (28.2%)
Long term outpatient		15 (7.4%)
Residential Treatment		20 (9.4%)
Sober House		15 (7.4%)

Table 1. Socio-demographic and Substance Use Characteristics of Angel Program Participants (n=376)

Program Referral Outcome

From police documentation, of the 429 encounters, 12 required direct medical clearance and were sent to a hospital for evaluation. Of the remaining visits, 94.5% (394/417) were offered direct placement into detoxification or treatment; 20 of these individuals declined the placement option identified. For 3.8% of individuals, placement was not obtained, secondary to insurance problems, living outside of Massachusetts, or lack of appropriate treatment availability. For 1.7%, placement data were not available. With the exception of those turning in works being greater among individuals placed ($p=0.046$), there were no statistically significant differences in measured demographics comparing individuals who received placement to individuals not placed, refused placement, or had unknown placement.

Follow-up call rates

There were 367 of the 376 participants who provided telephone contact information for themselves or someone close to them. The contact rate was 62.4% (229/367), the total response rate (complete and partial) was 53.7% (197/367), and the cooperation rate was 86% (197/229) (Figure 3).[19] There were no statistically significant differences in demographics between the individuals who completed the follow-up questionnaire compared to those who declined to participate, were not reached, or had no contact information available (Appendix 3). Mean time from date of participation in the program to successful telephone follow-up was 6.7 months (ranging 2 to 13 months).

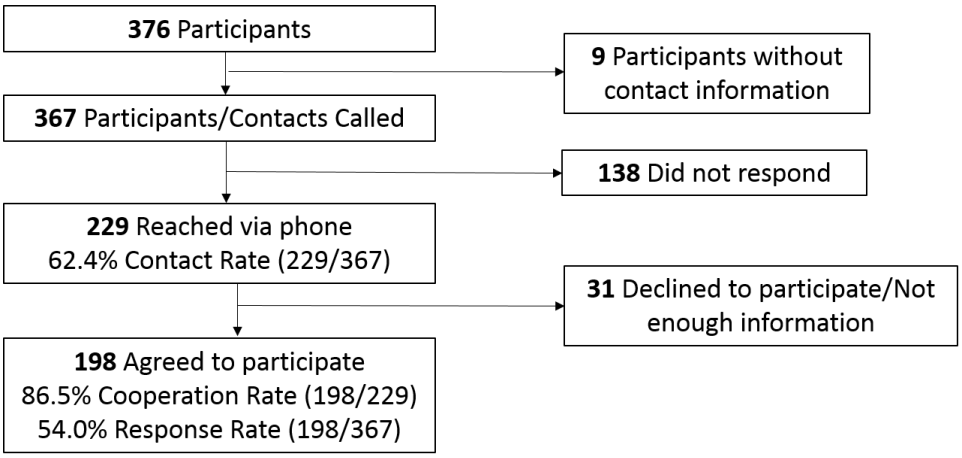

Figure 3: Follow-up call response schematic

Reasons for Participation

Participants stated that they came to the GPD for four primary reasons: 1) positive program publicity offered hope for help, 2) belief that the GPD would be open and could obtain placement, 3) the current treatment system was failing them and 4), external pressure with no other alternative.

Participants said that they learned about the program via social media, local news, family or friends, or a personal connection to police. One participant described that he "had done the 30 days, the spin cycles, [and was] tired of it. I [saw] on Facebook about Gloucester and knew the people, they do great things" (Participant 11). Another participant reported feeling motivated after he saw the publicity about the program advertised on TV: "I saw [the program] on the news in the morning, it put an idea in my head. [I] had been unable to get placement on my own so I gave it a try" (Participant 196). In addition to media awareness, individuals commented that they were connected to the program through family and friends and those who previously participated: "I had been

through hospital pathway before, in-and-out often, thought I'd try something new, [it] worked for mother's friend's son" (Participant 53). Finally, one participant reported she had a comfort with police from family members working as officers, which made her go to the GPD when she wasn't sure how else to get help: "I felt familiar with cops. Grew up with them [so] it was easy to go through them … I didn't know where else to go" (Participant 114).

Many individuals described frustration with previous unsuccessful attempts to find placement through a hospital. They believed that the Gloucester program would be able to provide quick placement because it had worked for others. The friend of one participant reported he "heard Gloucester was the quickest with placement. [I] knew if placement took too long [participant] would change mind and not want to go" (Contact of 131). Another participant said he had tried for a long time to find a bed and "hospitals just give you a list of detox places, won't even commit you if you say you're going to kill yourself and they find out you're detoxing. Hospitals have no sympathy or empathy" (Participant 34). Additionally, there was an overwhelming sense that the treatment system was difficult to access and not effective. A key component of the AP was twenty-four-hour access. A participant commented, "they were 100% responsive at 10–11 at night and on weekends. It was a priority for them" (Participant 133).

Finally, there was pressure from external agencies or family members who insisted that the participant obtain help. Participants commented that they came because their parole officers or caseworkers required it: "DCF [Child Welfare] sent me to GPD. [My] previous methadone program was a joke" (Participant 35). Many participants were

brought by family members who felt desperate for another option: “My mom read about it and gave [me] an ultimatum: ‘go or get out of house’” (Participant 159). Additionally, family members shared struggles of trying to support their loved ones in recovery. A mother shared her desire to try all avenues after resorting to the courts to mandate treatment without success: “I had tried everything, sectioned [legally mandated treatment] 6–7 times, had him arrested, kicked him out, [it was a] three year-long battle” (Contact of 33).

Experiences participating in the program

The majority of the participants spoke of positive experiences interacting with the police, praising 1) a willingness to work hard to identify placement, 2) the non-judgmental services they received, and 3) connection over shared experiences with addiction. First, numerous participants commended the work ethic of the officers: they “worked really hard, as if it was one of their kids” (Participant 147). Several participants praised the personal commitment by Chief of Police Campanello as the most impactful part of their experience in the AP particularly his willingness to follow up with participants at all hours. One participant’s family member said the “Chief was in constant contact with [the participant] who, was more comfortable texting the Chief about relapse than his mom” (Contact of 33). Another reported that the “Chief came in at 11pm on [his] day off to talk with me” (Participant 34).

Many participants reported that the AP felt free from stigma: “Gloucester looks at you differently, no judgment… hospitals just put you in a corner” (Participant 142).

Another participant reported how meaningful it was that an officer disclosed his own personal experiences with addiction: “One officer admitted that he was also in a [treatment] program and struggled, respected his honesty” (Participant 107). Negative experiences exposed some barriers to treatment referrals and were most common among participants who: 1) returned to Gloucester for additional help, 2) had a criminal justice history, 3) did not qualify for the program, and 4) called in for help rather than going to the GPD in person.

For some individuals who came to the AP more than once, their experience the second time through was not as positive. One participant commented: “first time through was great, found a place quickly. Second time through no one followed up and no one helped” (Participant 68). Additionally, an individual who had prior criminal justice involvement with the GPD reported this history impacted his experience negatively: “GPD… brought it up when I went for help… didn't appreciate the attitude with which they treated me due to my past criminal history” (Participant 29). Next, when an individual was not eligible for placement, yet had traveled to the police station for help, a family member reported being treated poorly: “Cop rudely said ‘what do you want me to do, sit here and argue with you’ when told my daughter did not qualify for program” (Contact of 311).

Several participants and family members called the AP rather than coming into the station. While at times officers were able to place individuals over the telephone, capacity was limited to support those requests. This barrier left participants frustrated:

"officers aren't calling people back, not right. If reaching out for help, someone should have common courtesy and call back" (Contact of 62).

Placement confirmation and retention

Among the 198 participants who completed follow-up interviews, there were 214 eligible encounters to the AP; 86% (185/214) confirmed that the AP identified a placement, and 75% (160/214) confirmed they went to the placement identified (Figure 4). Participants expressed their gratefulness that quick placement was facilitated, one individual felt "there was no hope and then suddenly I had access to a bed, and the officer was very kind" (Participant 304). Even when a participant ended up declining the placement offered, she felt participation initiated her recovery: "Although I didn't go the placement they offered, they really kick-started my recovery process, I felt like there was hope" (Participant 113). Services were limited for participants who came to Gloucester seeking treatment options other than detoxification. One contact commented participant was "already on Vivitrol [naltrexone] so GPD wouldn't place. We drove a long time up there and then they refused to give him treatment" (Contact of 72). The confirmed placement percentage was lower than the 94.5% of encounters documented in police records.[20] Reasons shared for placement discrepancy included denial by treatment program on arrival (e.g. lack of appropriate insurance or eligibility issues including negative urine drug tests at intake) and participants asserting they identified placement on their own, not facilitated by the AP.

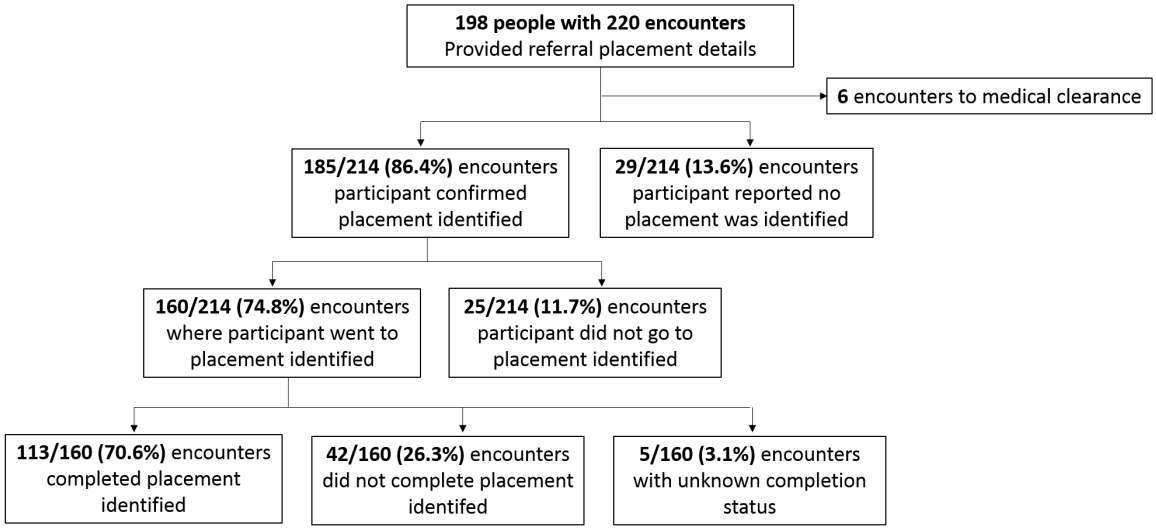

Figure 4: Placement schema by encounters to the AP

Participants were largely sent to detoxification, with an average length of stay of 9.5 days (ranging 1 to 90 days). Of the encounters in which participants confirmed they went to the placement identified, 70.6% (113/160) reported completing the program in which they were placed (Figure 2). Participants' paths varied following initial program placement. Access to ongoing treatment was often limited and depended on the linkage resources at the specific placement. Many participants described frustration that detoxification was the easiest access point to the treatment system, but they had to be actively using substances to be eligible for placement. "[It's a] catch-22 where you need to be dirty to get in [to detox], but can't get into aftercare from detox" (Participant 210).

Continued Treatment Engagement

Among those who completed the program they were placed into by the GPD, 68% (77/113) reported they went to additional treatment. Participants and families described challenges finding appropriate follow-up treatment. One individual reported that the

"burden of finding aftercare fell to my mom – had to drive into Boston five straight days to find aftercare" (Participant 186). Frequent failure to link a participant to a higher or lower level of care from detoxification highlighted the fragmentation in the current treatment system. A participant stated: "Detoxes let people go on the street while waiting for follow up care, need more access to Vivitrol[naltrexone]/methadone/clinics after detox" (Participant 316). For some individuals, even when treatment options were available, there was a mismatch between what was available and what participants felt they needed or wanted. One participant exclaimed that he "needed a job [to keep his] health insurance, [but] was unable to find aftercare that would not jeopardize his job" (Participant 45).

Substance Use Outcomes

Among all eligible participants reached, 37% (71/192) reported they had abstained from substances since participation, with no significant differences comparing those who were placed by the GPD, or who completed placement program. Finally, 72% (139/192) of all eligible participants were engaged in any form of treatment (defined as any of the following: short and long-term residential, sober house/transitioning living, intensive outpatient/outpatient counseling, faith based programming, 12-step, and opioid agonist treatment) at the time the survey was completed, also with no differences by program placement or completion.

DISCUSSION

The GPD successfully designed, developed, adapted and implemented a novel police-based addiction treatment referral program that served more than 350 individuals in the first year. The adaption of the program from the initial design utilizing the hospital emergency department for clearance and placement to police officers directly contacting treatment facilities occurred almost immediately after program inception. The experience of police officers identifying placement more quickly than trained screeners exposed a lack of capacity in the existing treatment system to provide rapid access to care. Participants voluntarily went into the police station to obtain treatment when they were motivated to seek care or after feeling pressure from their family and external agencies. The majority of the participants heard about the program from positive publicity on social media and through social networks. Follow-up telephone calls confirmed that a police-led public health intervention could deflect motivated individuals into at least the first step of addiction treatment without a preceding arrest or other formal criminal justice involvement.

In the first year of the AP, there were 429 visits or calls to the GPD seeking help. As opposed to court-mandated treatment services or drug-courts, which require contact with the criminal justice system through arrests, the AP relied on participants voluntarily coming into the police station. Participants came from all over the US to receive treatment referral and placement, highlighting a demand that has not been met with the current treatment system.

The individuals coming through the AP were significantly more likely to be male,

similar to Massachusetts treatment admissions for heroin and opioid use, (70% Gloucester, 68% state heroin admissions, 59% state opioid admissions) despite less disparate rates of opioid use by gender.[21–23] As young men are less likely to be engaged in routine health care, the AP may have provided a new opportunity for males to seek access to immediate treatment outside of the medical system. Conversely, women desiring treatment may feel less comfortable entering a traditionally male-dominated space such as a police station, in addition to previously documented barriers related to childcare responsibilities.[24,25]

Research has shown that when direct referral to treatment is available individuals were 30 times more likely to engage in care compared with those given information to find treatment on their own.[26] A central objective of the AP was to reduce barriers to accessing the treatment system by providing direct referrals to addiction services. Several key elements allowed the AP to achieve a high number of direct referrals. First, a relationship was developed early on with a newly-opened local treatment program. This program rapidly became the first place officers called and almost half of participants were placed there; if no placement was available, officers were persistent in locating other services. Second, the GPD made an extended effort to overcome barriers they identified such as paying for transport, pushing for treatment programs to waive co-payments, and even paying some co-payments. Next, over 85% of the participants in the AP had insurance; the program benefited from a new state law prohibiting insurance carriers from requiring prior authorization for acute addiction treatment.[27] Additional facilitators to placement included a volunteer "Angel" to support participants while

awaiting placement, participants entering the station voluntarily and motivated to seek treatment, and officers looking for available placements at any time, day or night.

While the majority of individuals reported positive experiences with welcoming and non-judgmental police, some participants described negative experiences when returning a second time after relapse or after they were deemed ineligible for the program. Caring for people with OUD can be challenging; negative attitudes and burnout are high among mental health providers who care for patients with substance use disorder.[28,29] The participants in the AP benefited from dedicated leadership that championed addiction treatment without stigma. However, when individuals required help on more than one occasion or did not meet program qualifications, the officers' were less able to provide non-judgmental care. Additional training and support for officers acting outside of their usual roles may be important to sustain compassion and promote resiliency.

The majority of participants were placed in detoxification, as over 85% had used opioids in the prior 24 hours.[20] Detoxification services are the most readily available service in Massachusetts, and participants benefited from a state law passed in 2016 requiring insurance companies to cover detoxification without prior authorization.[30] For individuals who needed intensive outpatient, residential, or medication treatment, the AP had fewer options to facilitate placements. Office-based opioid treatment programs operate largely during regular business hours and some have protocols that require multiple visits before a person can be started on medication. New models are emerging that aim to link individuals with OUD to treatment when they first present to an

emergency department or clinic.[31] Yet to genuinely improve access to care, specialized referral services must be readily available at all times so that individuals with OUD can obtain treatment whenever they are ready.[32]

Finally, while detoxification may prevent short-term use, it does not guarantee engagement in long-term outpatient treatment. Prior research among individuals returning for additional care at detoxification centers found post-opioid detoxification relapse rates were 27% on day of discharge, 65% within one month of discharge and 90% within a year of discharge.[33] Among AP participants, after completing a detoxification program, many participants found themselves facing similar barriers as when they first came to the GPD: struggling to navigate a complex treatment system and find additional services, at a time of highest risk for fatal overdose.[34] When participants returned to the GPD to ask for further help, officers were able to assist some participants in securing formal long term treatment, but follow up was not possible for all participants. Finally abstinence rates at time of follow up telephone call in our sample were similar, regardless of program

Limitations

There are several limitations to the data presented. The AP is a real world program innovation, and not a hypothesis-driven research project. Data collection was conducted by police officers at a time when a participant was in need of help and often a time of stress. As a result, forms were sometimes partially filled out, resulting in a significant amount of incomplete data.

The follow-up call response rate was 54%, making non-response bias possible. Individuals who did not respond may have been different than respondents in terms of OUD severity or program experience even though I found no statistically significant differences in characteristics between responders and non- responders. This response rate is within the range of previously published evaluations of screening and brief referral in emergency-based settings with individuals with substance use disorder (ranging from 22–84%)[26,35]

Follow-up calls to participants relied on self-report and are subject to recall bias. Open-ended comments were taken from notes transcribed verbatim, but were not audio recorded. Finally, follow-up calls reached participants at a range of time points post-participation, making comparisons across substance use outcomes and treatment engagement limited. Despite these limitations, this is the first known description of a police-led treatment linkage program for people with SUD, and includes a year of both quantitative and qualitative data describing both the program and the people it serves.

CONCLUSIONS AND PUBLIC HEALTH IMPLICATIONS

The AP successfully provided an alternate gateway for individuals with OUD to access treatment. Despite many potential barriers for individuals with SUD to enter a police station, including prior arrests, people voluntarily came to seek help. Individuals who had previously accessed treatment through traditional routes elected to come to a police department rather than a hospital or clinic because they wanted to obtain immediate access to treatment, be treated with respect, and help overcoming barriers to

care that they had previously experienced.

The findings demonstrate the feasibility and acceptance of a police-led deflection program, which was able to secure short-term detoxification placements at high rates. This program, however, was not able to overcome the fragmentation of the current addiction treatment system. Despite increasing recognition of addiction as a chronic medical illness with repeated cycles of relapse and recovery [36,37], the treatment system is still organized around acute episodes of care rather than comprehensive longitudinal care. Deflection programs may provide a needed entry point for those seeking substance use treatment but increased accountability for patients and coordination among treatment providers to provide long term evidence based addiction treatment are needed to meet the challenge of the opioid epidemic.

APPENDIX 1

Intake Interview Form

Faxed to Insurance Plan:

Part I: Intake information

Participant ID: _____ Placement:

Date and Time: _____

Name: _____

Address: _____ City: _____ State: ____ Zip: _____

☐ Currently Homeless? Participant Phone Number: _____

Name and number of person who can contact the Participant _____

Date of Birth: _____ Gender: ☐ Male ☐ Female ☐ Transgender

Why did you decide to come for this service now:

Part II: Health and Safety Assessment

When was the last time you used any opioid?

☐ Same day ☐ Yesterday ☐ 2–4 days ☐ 5 days or more

What opioid did you last use?

☐ Heroin ☐ Methadone ☐ Suboxone/Subutex/Buprenorphine ☐ Fentanyl

☐ Oxycodone/Oxycontin/Percocet/Hydrocodone/Vicodin/MS Contin

Have you been arrested for drugs? ☐ Yes ☐ No If yes, about how many times _____

Are you turning over drugs? ☐ Yes ☐ No If yes, description of drugs: _____

Are you turning over works? ☐ Yes ☐ No If yes, description of works: _____

Part III: Current Drug Use and History

Which of the following opioid drugs do you currently use? (check all that apply)
☐ Heroin-inject ☐ Heroin-snort ☐ Methadone ☐ Suboxone/Subutex/Buprenorphine
☐ Prescription Drugs (Oxycodone/Oxycontin/Percocet/Hydrocodone/Vicodin/MS Contin)
☐ Fentanyl ☐ Other _____

What other illicit drugs do you currently use? ☐ Cocaine ☐ Meth ☐ Marijuana
☐ Other _____

How old were you when you: first used drugs? _____ first used opioids?_____
Did you ever use prescription drugs other than the way they were prescribed *before* using heroin?
☐ Yes ☐ No ☐ N/A
How many times have you been to detox? ☐ Never ☐ 1–5 ☐ 6–10 ☐ >10

Have you ever tried to get addiction treatment other than detox?
☐ Yes - have gotten into treatment ☐ Yes - have tried, but have not been able to get into treatment ☐ No - never tried ☐ No - didn't think I needed it

How many times have you received treatment for opioid use disorder in the past?
☐ Never ☐ 1–5 ☐ 6–10 ☐ >10

What types of treatment have you received for opioid use?
☐ Methadone ☐ Suboxone/Buprenorphine ☐ Self Help (AA, NA, etc.) ☐ Counseling
☐ Long-term outpatient program ☐ Residential treatment program ☐ Sober House
☐ Other: _____

What is your plan for after detox?
☐ Go away ☐ Medication Assisted Treatment (suboxone, methadone) ☐ Self Help (AA, NA, etc.)
☐ No, just want to dry out ☐ Sober house ☐ Have not thought about it
☐ Other: _____

Part IV: Other Demographic Information

What is your current relationship status?

☐ Legally married ☐ In a committed relationship ☐ Widowed ☐ Separated
☐ Single, never married ☐ Divorced

How much school have you completed?

☐ Some high school ☐ High school/GED ☐ Some college ☐ College graduate

At any time in the past 30 days, did you work at a paying job?

☐ Yes - part type ☐ Yes - full time ☐ No

Do you have contact with your family?

☐ Yes ☐ No

How did you hear about the Gloucester program?

☐ Family ☐ Friend ☐ Media/News/TV/Radio ☐ Social Media/Online/Facebook
☐ Word of mouth ☐ Clinic/recovery group/social service group ☐ Gloucester PD / PAARI
☐ Know someone who went through program ☐ Other
_____

Part V: Health Insurance Information

Do you have health insurance? ☐ Yes ☐ No

Insurance Carrier:

☐ Blue Cross Blue Shield (BC/BS, Anthem BC/BS)
☐ Boston Medical Center HealthNet /HealthNet
☐ Celticare Health (Ambetter)
☐ ConnectiCare
☐ Fallon Community Health Plan
☐ Harvard Pilgrim Health Care
☐ Health New England
☐ Other:_____
☐ Mass Behavioral Health Partnership (MBHP]
☐ Minuteman
☐ Neighborhood Health Plan/Beacon
☐ Tufts Health Plan
☐ Tufts Health Public Plans (Network Health)
☐ UniCare State Indemnity Plan
☐ United Health Care

Insurance Card Number: _____

THIS SECTION FOR OFFICIAL USE ONLY

Part VI: Warrant Check by PD

Warrant check completed: ☐ Yes ☐ No List any warrants:
_____

BOP check completed: ☐ Yes ☐ No History of violence? ☐ Yes ☐ No

Does BOP include 3 or more drug related arrests and at least one of them is a conviction for possession with intent to distribute OR trafficking OR drug violation in a school zone?

☐ Yes ☐ No List _____

Part VII: Placement Information

Do you have any imminent safety concerns about the Participant?
☐ Yes ☐ No List _____

Were you able to place the Participant?
☐ Yes - detox placement
☐ Yes - treatment
☐ Yes – medical clearance
☐ No - no placement available
☐ No - participant refused placement plan
☐ Participant to plan to follow up on own

How many places did you have to call to place the Participant? _____

Where did you place the Participant:
☐ AdCare
☐ Baldpate
☐ Boston Treatment Center/CAB Boston
☐ Brockton Treatment Center
☐ Community Health Link
☐ Danvers CAB
☐ Dimock

☐ High Point
☐ **Medical Clearance (AGH, Hospital)**
☐ **Not Placed**
☐ **Refused**
☐ **Spectrum**
☐ **Other:** _____

Placement notes:
(where did you call?)

Additional
comments/issues:

Officer: _____

Supervisor:_____

This is to certify that I, (participant name) _____ , agree to allow a Volunteer ANGEL to accompany me during my intake.
I further understand that at any time I no longer feel comfortable with the Volunteer ANGEL I can request a new Volunteer ANGEL (if available) or to not have a Volunteer ANGEL assigned to me.

I also agree to be contacted in the future by the Gloucester Initiative to learn about my experience in the program. I understand that the information I provide may be used by the Gloucester Initiative and the Police Assisted Addiction Recovery Initiative to help improve the program. My name will not be used.

I also agree to allow any and all treatment centers to update the Gloucester police department and/or the Gloucester Initiative on the status of my treatment and/or any other issues deemed relevant. This is done purely for statistic reasons and will be used for follow up on the program. These updates will be secure and strictly confidential.

I agree that if there is any exchange of contact information (phone numbers, email addresses, physical addresses, etc.) with the ANGEL, this will be done only with mutual agreement between the participate and the ANGEL.

I further agree that any scheduled contact with the ANGEL outside of the Gloucester initiative or the Gloucester police department is a personal decision and will not be inclusive in any part of the ANGEL program.

_____ / _____
Signature of Participate / Date

_____ / _____
Signature of Witness / Date
]

APPENDIX 2

Follow Up Interview Form

Participants Name_____
ID from GPD_____
Telephone number reached_____
Spoke with ☐ Participant ☐ Parent ☐ Other_____
Date_____
Caller name_____

1. How is PARTICIPANT doing now?

2. Where were you placed from the Gloucester ANGEL program?

☐ AdCare
☐ Baldpate
☐ Boston Treatment Center/CAB Boston
☐ Brockton Treatment Center
☐ Community Health Link
☐ Danvers CAB
☐ Dimock
☐ High Point
☐ Medical Clearance (AGH, Hospital)
☐ Not Placed
☐ Refused
☐ Spectrum
☐ Sstar
☐ Tewksbury
☐ Out of State
☐ Other: _____

NOTES:

a. (if person says he/she was not placed, or did not go somewhere, please tell me why) then, skip to question #8)

_____
_____
_____
_____

3. How many days did you stay at (name of program) _____

4. Did you complete the program? Yes____ No_____

a. IF DID NOT COMPLETE ASK: Can you tell me why you did not complete the program?_____
_____
_____

5. How helpful was the initial treatment/detox program where the GPD placed you?

a. Very
b. Somewhat
c. Not very much
d. Not at all

Why or why not?

_____
_____

6. While you were at (name of program), did they talk with you about follow up treatment ? yes____no____.

IF YES ASK: Did you follow the plan? Yes_____ No_____
IF NO, ASK: Why wasn't the plan followed?
___I didn't want it; didn't think I needed it
___Was told there was no bed
___I didn't have insurance; some other insurance related reason
___I wanted another form/place of treatment but it wasn't offered

7. Did you go to additional treatment when you left? Yes_____ No_____

a. IF YES ASK: where did you go?_____

8. Since going to the Gloucester Police Department, have you started using again? Yes ____ No _____

IF NO ASK: for how long have you been in recovery? _____
IF YES ASK: When did you start using again? _____
How many times have you used? _____
What drugs did you start using again? CHECK ALL THAT APPLY

☐ Heroin ☐ Prescription Pain Meds ☐ Cocaine ☐ Alcohol ☐ Meth ☐ Benzos
☐ Marijuana ☐ Other _____

9. Since going to GPD has anyone offered you any of the following treatment options:

☐ short term residential/CSS/TSS (<30 days) ☐ long term residential (>30 days)
☐ sober house/sober shelter ☐ outpatient substance counseling
☐ Intensive outpatient counseling (many hours per week, mult times per week)
☐ faith-based programs ☐ 12 step/AA/NA/Smart Recovery or other peer support group ☐ Suboxone/buprenorphine ☐ Methadone ☐ Vivitrol/naltrexone
☐ Other _____

10. Are you getting any treatment now? Yes_____No _____

☐ short term residential/CSS/TSS (<30 days) ☐ long term residential (>30 days)
☐ sober house/sober shelter ☐ outpatient substance counseling
☐ Intensive outpatient counseling (many hours per week, mult times per week)
☐ faith-based programs ☐ 12 step/AA/NA/Smart Recovery or other peer support group ☐ Suboxone/buprenorphine ☐ Methadone ☐ Vivitrol/naltrexone
☐ Nothing can help me ☐ Other _____

11. IF THE PERSON IS USING AND **NOT** IN TREATMENT SAY: If you are not currently in treatment, the GP department will help people as many times as they want. Would you like to return to the Gloucester police station for more help in your recovery? _____yes _____no

IF YES give instructions on how to go or contact the GP.
IF NO ASK: , May I ask why you do not want to return to the GP department?
_____wasn't helpful last time
_____I am not ready to quit
_____I have someplace else that will help me

12. At any time in the past 30 days, did you work at a paying job?

☐ Yes - part type ☐ Yes - full time ☐ No

13. After leaving the GPD, has either a treatment program or an insurance company case manager contacted you about a plan for your treatment or recover?

☐ Treatment Provider ☐ Insurance company ☐ Other: _____
Can you tell me what the person did and what happened as a result?
_____
_____
_____

14. **What was the reason you sought help from the GPD as opposed to a hospital or Treatment Center?**

    _____
    _____
    _____

15. **Can you tell me about your experience with the GPD?**

    _____
    _____
    _____
    _____
    _____

16. **Do you have any advice or suggestions of how to improve the GPI or treatment and recovery services for people like you?_____**

    _____
    _____

Thank you very much for your time.

APPENDIX 3

Supplementary Table

Socio-demographic and Substance Use Characteristics of AP Participants, comparing Follow-up responses to non-responses.*

Table (n=376)				
Characteristic	Number of responses	Responses Frequency (%) or Mean (sd)	Non-Responses Frequency (%) or Mean (sd)	P-value
Age (yrs)	374	29.2 (11.3)	29.6 (7.8)	0.68
Gender (% male)	373	144 (70%)	117 (70%)	0.90
Location	374			0.15
Gloucester		25 (12%)	19 (11%)	
Other Essex County, MA		53 (26%)	40 (24%)	
Other MA		91 (44%)	62 (37%)	
Out of state		7 (3%)	14 (8%)	
Currently homeless		30 (15%)	33 (20%)	
Insurance Status (% yes)	362	172 (86.0%)	137 (84.6%)	0.70
Education (% HS graduation)	307	149 (87%)	114 (84%)	0.65
Relationship status (% single, never married)	308	137 (79%)	108 (80%)	0.27
Prior drug arrests (% yes)	295	83 (52%)	78 (57%)	0.38
Age started using drugs (yrs)	281	15.4 (3.5)	15.3 (3.7)	0.63
Age started using opioids (yrs)	287	20.6 (6.0)	20.1 (5.0)	0.89
Last opioid use	326			0.26
Same day		92 (51%)	86 (59%)	
Yesterday		59 (33%)	35 (24%)	
2–4 days		16 (9%)	17 (12%)	
>5 days		13 (7%)	8 (5%)	
Prior detox	285			0.43
Never		32 (19%)	21 (18%)	
1–5 times		78 (47%)	66 (56%)	
6–10		28 (17%)	14 (12%)	
>10		29 (17%)	17 (14%)	

*All t-test or Chi-square statistical tests yielded a p-value >0.05

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